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| 09/825,451      | 04/02/2001  | Arthur Francis Champernowne | EXINM117029         | 1798             |

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| EXAMINER |
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MOONEYHAM, JANICE A

| ART UNIT | PAPER NUMBER |
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3629

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/825,451

Applicant(s)

CHAMPERNOWNE, ARTHUR  
FRANCIS

Examiner

Jan Mooneyham

Art Unit

3629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2001 and 22 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### DETAILED ACTION

This communication is in response to the application filed on April 4, 2001. Claims 1-36 are currently pending in this application.

#### *Information Disclosure Statement*

1. The Informational Disclosure Statement filed on October 22, 2002 is being considered by the examiner.

#### *Specification*

2. **The abstract of the disclosure is objected to because it does not sufficiently disclose what the applicant is claiming as applicant's invention.** Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

**3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact.** The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

On page 5 of the specification, line 18, the applicant starts a sentence but does not complete it. The applicant states that "by using an implicit enumeration, the ..." The applicant fails to explain what happens by using an implicit enumeration. There are several typographical errors throughout the specification.

#### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**4. Claims 1-36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the

Art Unit: 3629

"progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

In the present case, claims 1-36 only recite an abstract idea. The recited steps of merely obtaining information determining a set of partial fare solutions, adding trip information to the partial fare solutions, eliminating partial fare solutions that are non-optimal, and returning a subset of complete fare solutions does not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper. These steps only constitute an idea of how to find at least one best fare for a trip.

No technology is recited in the preamble or the body of the claims in Claims 1-12. As to technological arts recited in the preamble of Claims 12-36, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble. In the present case, none of the recited steps are directed to anything in the technological arts as explained above with the exception of the recitation in the preamble that the invention is a computer readable medium in Claims 13-24 and the invention is an apparatus in Claims 25-36. Looking at the claim as a whole, nothing the body of the claim recites any structure or functionality to suggest that a medium or apparatus performs the recited steps. Therefore, the preamble is taken to merely recite a field of use.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**5. Claims 1-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 1-12 merely state abstract ideas and do not apply any of the technical arts.

Claims 13-26 recite a computer readable medium and an apparatus in the preamble but the applicant fails to point out and distinctly relate the subject matter of the preamble to the body of the claims. It is unclear whether the applicant is actually claiming an apparatus or a method in Claims 13-26.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**6. Claims 1, 3, 9, 10, 13, 15, 21,22, 25, 27, 33, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by DeMarcken et al. (US Patent No. 6,295,521) (hereinafter referred to a DeMarcken).**

**Referring to Claims 1,3, and 25:**

DeMarcken discloses a method and system for finding at least one best fare for a trip, the method comprising

determining a set of partial fare solutions for the trip (Figs 1-18, col. 51 – Finding the Best Price, see line 26-29), col. 55, lines 54-56);

adding trip information to the partial fare solutions in order to define a set of complete fare solutions for the trip (Figs.19-27, col. 5, lines 1-4);

as trip information is added to the partial fare solutions, eliminating partial fare solutions that are non-optimal partial solutions (col. 5, lines 4-6); and

returning a subset of said complete fare solutions as the best fares for the trip (Fig. 19, col. 49, lines 45-59, col. 51- Finding the Best Pricing Solution).

**Referring to Claims 3, 15, and 27:**

DeMarcken discloses the method and system of claims 1, 13 and 25, wherein said subset of complete fare solutions is a predetermined number of lowest cost fare solutions (col. 2, lines 31-37, col. 4, lines 30-41).

**Referring to Claims 9, 10, 21, 22, 33, and 34:**

DeMarcken discloses the method and system of claims 1, 13 and 25 wherein said partial fare solutions are stored in a priority queue, said complete fare solutions are retrieved from a priority queue (col. 55-61—Enumerating Pricing Solutions).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.



**7. Claims 2, 14, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarcken.**

**Referring to Claim 2, 14, and 26:**

DeMarcken discloses the method and system of claims 1, 13, and 25, wherein adding trip information comprises:

supplying a fare query to a root node in a solution tree (col. 7, lines 16-18, Fig. 2 (48));

assigning fare components corresponding to said root node to a plurality of

first nodes (Fig. 2, faring process (18), col. 16, lines 55-66);

assigning at least one carrier corresponding to said first nodes to a plurality of second nodes (Fig. 6, (114);

assigning at least one flight corresponding to said second nodes to a plurality of third nodes (Fig. 2, scheduler processor (16), col. 3, lines 55-66);

assigning at least one priceable unit corresponding to said third nodes to a plurality of fourth nodes (pricing solution, col. 3, lines 55-66); and

assigning at least one fare corresponding to said fourth nodes to a plurality of leaf nodes (Col. 10 – The Faring System- Fig. 19).

DeMarcken does not disclose assigning the fare components to a plurality of first nodes, at least one carrier to a plurality of second nodes, at least one flight corresponding to a plurality of third nodes, assigning at least one pricable unit to a plurality of fourth nodes, and assigning at least one fare corresponding to a plurality of leaf nodes.

However, Demarcken discloses a data structure comprising a plurality of nodes that can be logically manipulated using value functions and a graph that contains nodes that can be logically manipulated or combined to extract a plurality of pricing solutions. (col. 2, lines 38-51). It would have been obvious to one of ordinary skill in the art that Demarcken's method and system could be arranged to include the assignment of nodes as set forth in Claim 2, 14, 26 since DeMarcken's system and method discloses a data structure comprising a plurality of nodes and this could include the method as set forth Claims 2, 14, and 26.

**8. Claims 4-8, 11,12, 16-20, 23,24, 28-32, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarcken as applied to claims 1, 13 and 25 above, and further in view of Sabre, Inc. (PCT WO 01/29693), (hereinafter referred to as Sabre).**

**Referring to Claims 4, 16 and 28:**

Demarcken does not disclose the method and system of claims 1, 13 and 25, wherein said subset of complete fare solutions is an exhaustive set of said complete fare solutions.

However, Sabre discloses a method and system wherein the subset of complete fare solutions is an exhaustive set of complete far solutions (col. 2, lines 18-19, col. 3, lines 1-2, page 4, lines 17-22).

It would have been obvious to one of ordinary skill in the art to incorporate into the method and system of DeMarcken the teachings of Sabre so as to provide the lowest fare across a wide range of airlines and itineraries (page 3, lines 1-2)

**Referring to Claims 5, 17, and 29:**

Sabre further discloses the method and system of claims 1, 13 and 25, wherein adding trip information and eliminating partial fare solutions are performed in a recursive manner (page 9, lines 13-14, page 10, lines 2-4).

**Referring to Claims 6, 18, and 30:**

Sabre further discloses the method and systems of claims 1, 13, and 25, wherein adding trip information and eliminating partial fare solutions are performed in an iterative manner (page 9, lines 18-22).

**Referring to Claims 7, 19, and 31:**

Sabre further discloses the method and systems of claims 1, 13, and 25, wherein said partial fare solutions are eliminated based on a threshold cost (page 4, lines 17-23, page 9, lines 6-17, page 11, lines 16-18).

**Referring to Claims 8, 20, and 32:**

Sabre further discloses the method and system of claims 1, 13, and 25, wherein said partial fare solutions are eliminated based on a refined lower bound (page 9, line 6 thru page 12, line 11).

**Referring to Claims 11, 23, and 35:**

Sabre further discloses the method and system of claims 1, 13 and 25 wherein adding trip information and eliminating partial fare solutions are performed as part of a branch-and-bound best fare search routine (page 10, lines 4-10).

**Referring to Claims 12, 24, and 26:**

Sabre further discloses the method and system of claims 1, 13, and 25, wherein adding trip information and eliminating partial fare solutions are performed both backward and forward from a destination and origin (page 3, lines 13-18).

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schultz, US Patent No. 6,029,162, discloses a computer database system for representing and retrieving data from relational databases for calculating actual paths and path length through a graph.

Scipioni, US Patent 6,336,097, discloses an apparatus and method for constructing large numbers of travel fares.

Lin, Proctor, AMADEUS: Amadeus enables lowest possible airfare search on line,

Des Ruisseaux, Richard, Have computer, you can travel Websites help save some money on fares, Denver Post.

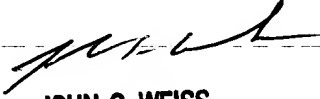
Art Unit: 3629

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan Mooneyham whose telephone number is (703) 305-8554. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on (703) 308-2702. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-3691 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

JAM  
June 22, 2003

  
**JOHN G. WEISS**  
**SUPERVISORY PATENT EXAMINER**  
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